Supplementary Information

Bacterial Adhesion and Erythrocyte Integrity on Polycaprolactone Nanowire Surfaces

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Bacteria Adhesion

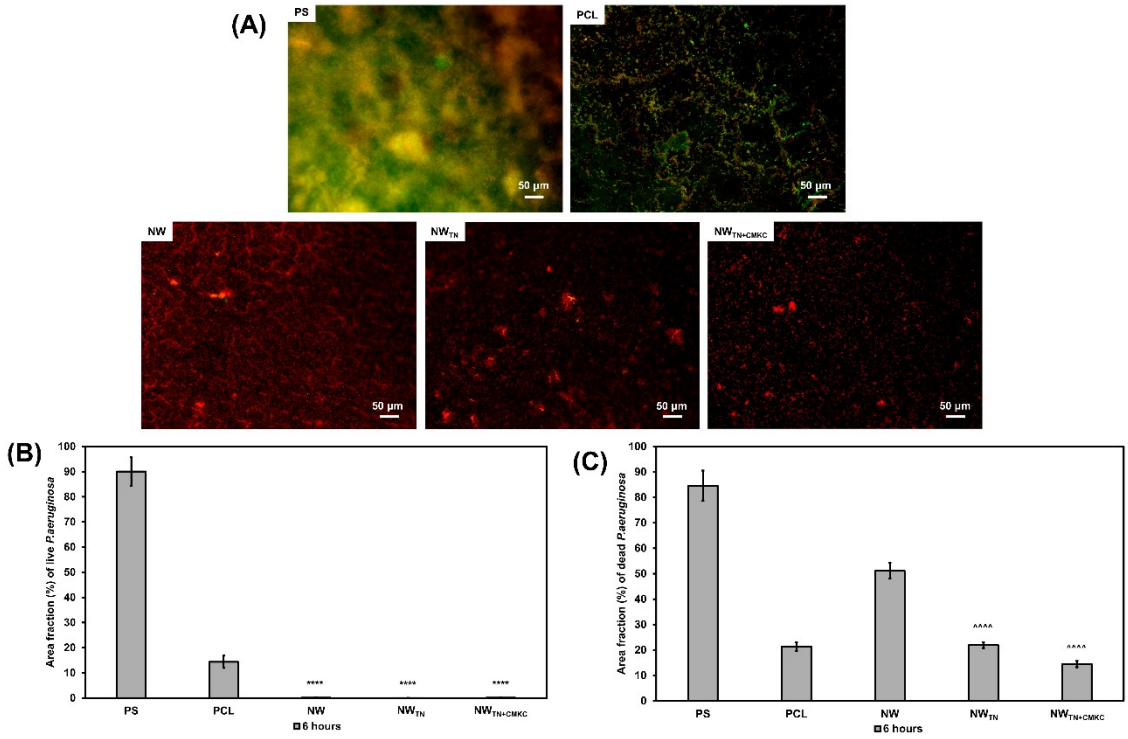

Fig. S1: (A) Representative fluorescence microscopic images of surfaces after 6 hours of incubation with *P. aeruginosa*. The graphs represent the percentage of the area fraction of different surfaces covered by **(B)** live and **(C)** dead *P. aeruginosa* bacteria after 6 hours of incubation. **** represent *p*-value <0.0001 when compared to PCL control and ^^^^ represent *p*-value <0.0001 when compared to NW.

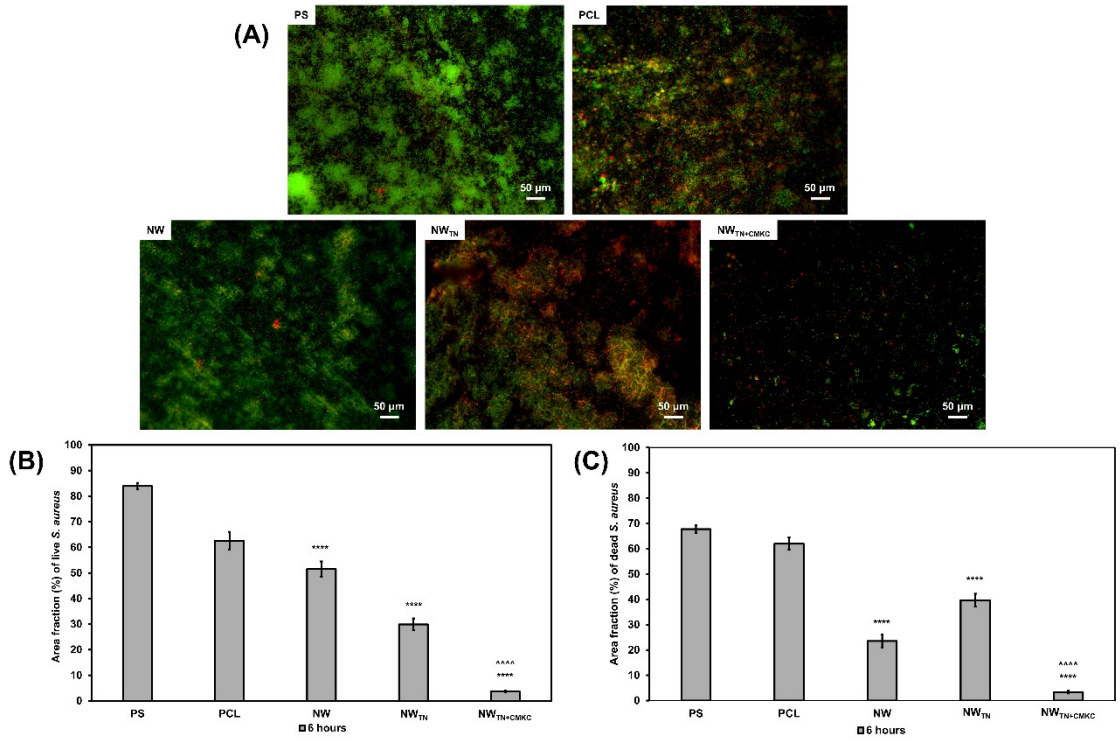

Fig. S2: (A) Representative fluorescence microscopic images of surfaces after 6 hours of incubation with *S. aureus*. The graphs represent the percentage of the area fraction of different surfaces covered by **(B)** live and **(C)** dead *S. aureus* bacteria after 6 hours of incubation. **** represent *p*-value <0.0001 when compared to PCL control and ^^^^ represent *p*-value <0.0001 when compared to NW_{TN}.

Bacteria Morphology

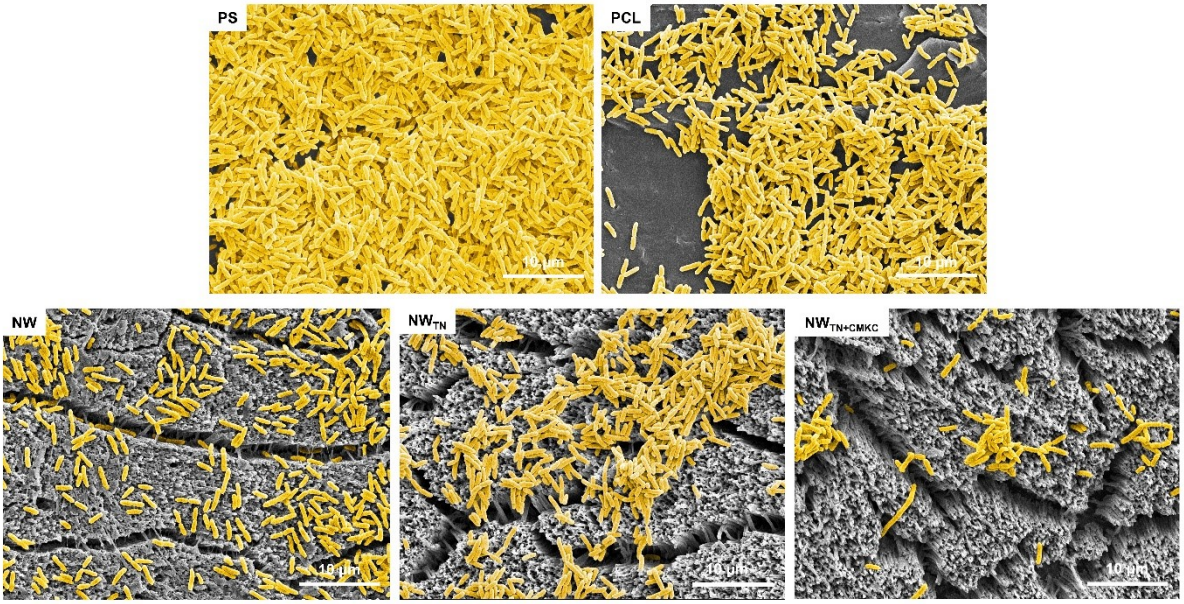

Fig. S3: Representative SEM images of bacteria morphology after 6 hours of *P. aeruginosa* incubation captured at 2500x magnification.

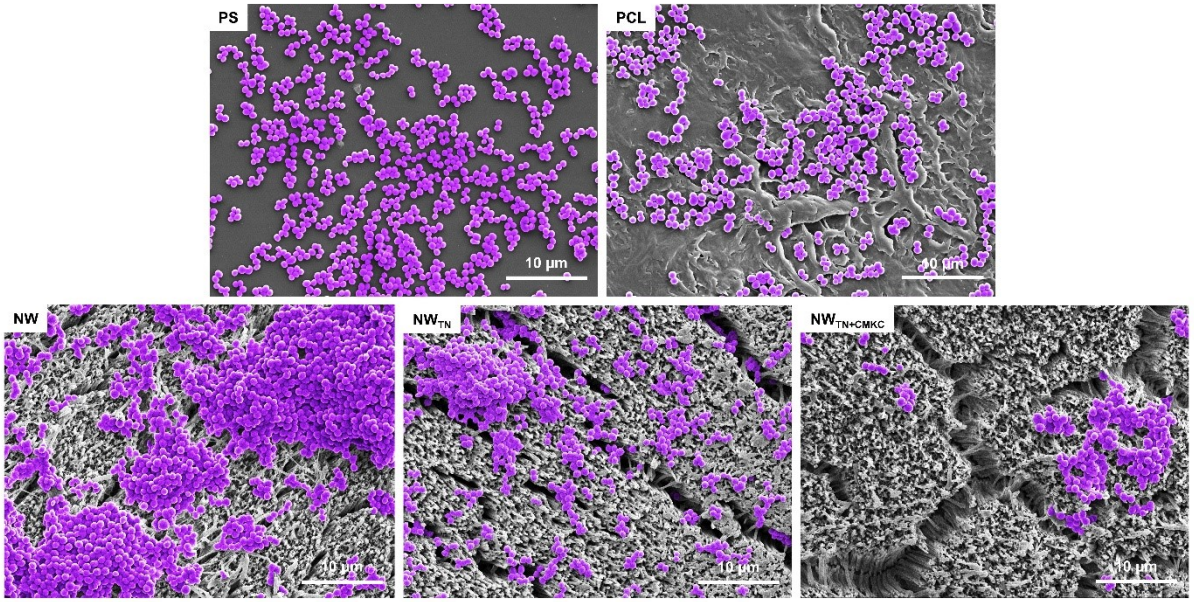

Fig. S4: Representative SEM images of bacteria morphology after 6 hours of *S. aureus* incubation captured at 2500x magnification.

Erythrocyte Adhesion on Different Surfaces

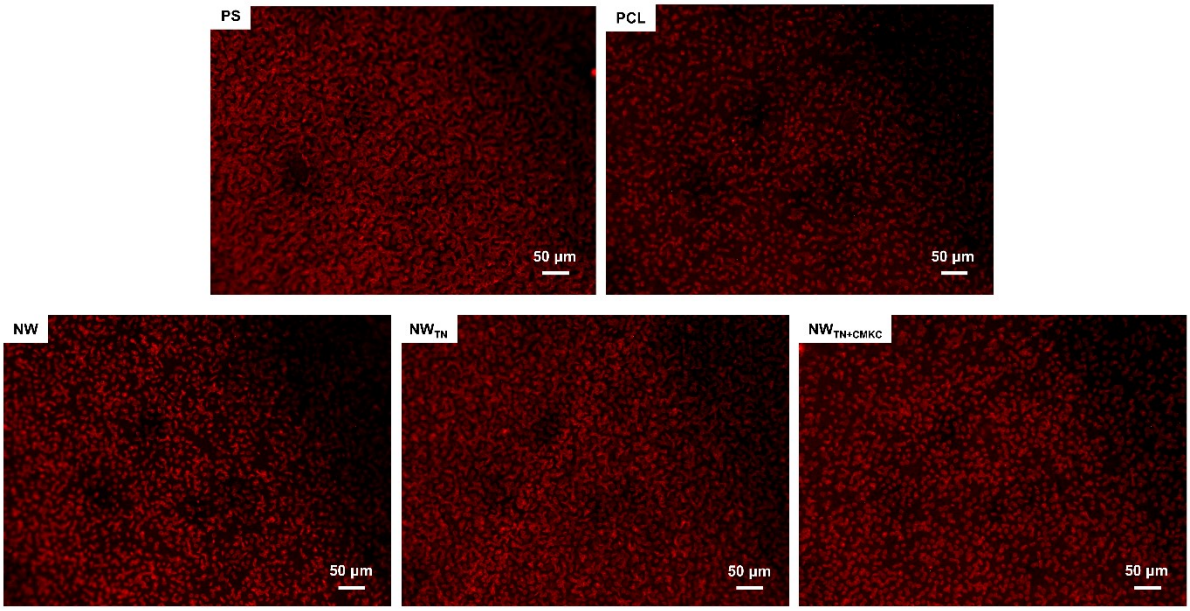

Fig. S5: Representative fluorescence microscopic images of adhered erythrocyte cells on surfaces after 1.5 hours of incubation.

Erythrocyte Morphology on Different Surfaces

After a 1.5-hour incubation period, PS had mostly stage 1 and stage 2 echinocytes on its surfaces. Compared to PS, PCL control surfaces had less echinocytes or other abnormal morphological changes after the 1.5-hour incubation period (Fig. S6A). Data from Fig. S6B also shows that PCL surfaces had around 40% of cell change, while it was almost 97% for PS surfaces. Results from Fig. S6B indicate that NW_{TN} and $NW_{TN+CMKC}$ surfaces had just 19.5% and 25.07% of cell change respectively after 1.5 hours of incubation.

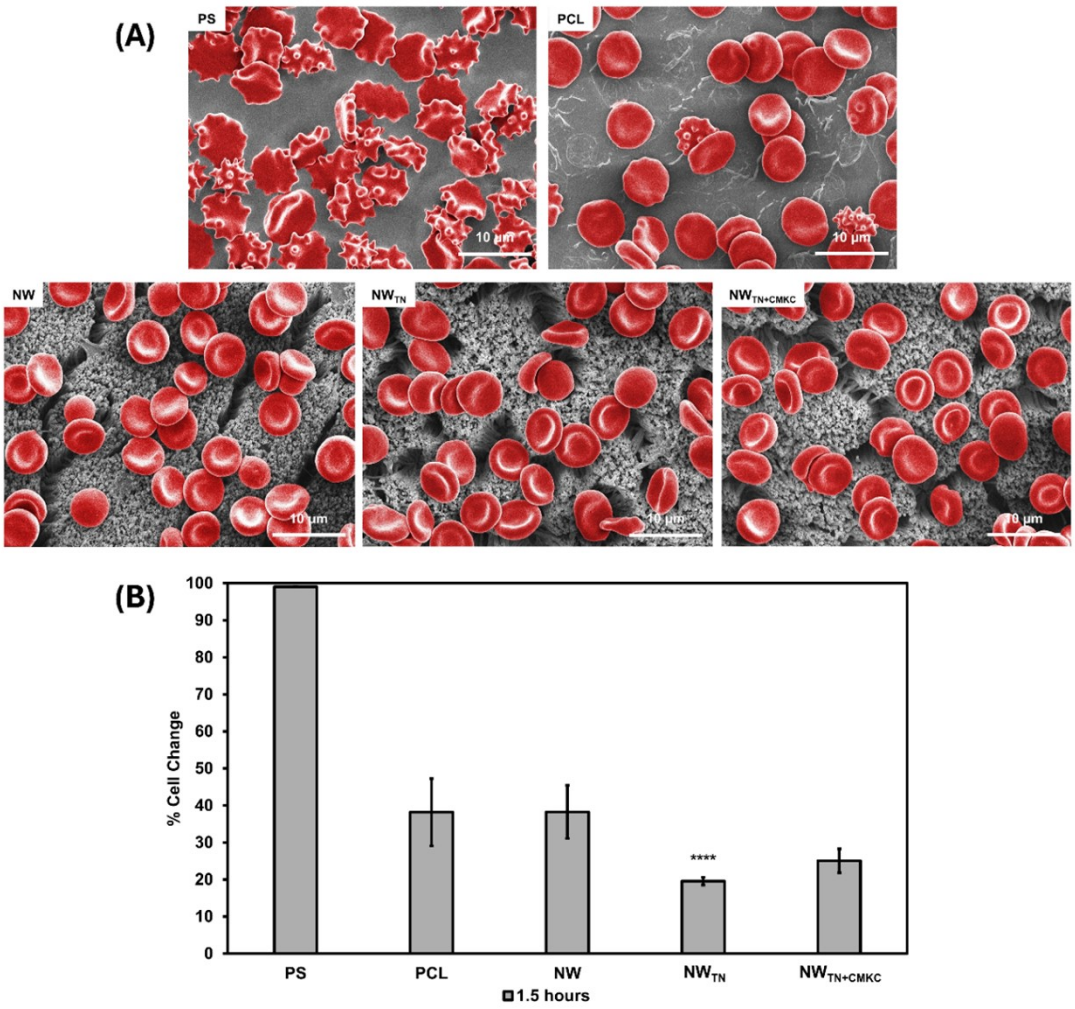

Fig. S6: (A) Representative SEM images depicting erythrocyte cells morphological changes on surfaces after 1.5 hours of incubation (2500x magnification. **(B)** Percentage of morphological changes in erythrocytes on different surfaces after 1.5 hours of incubation, characterized from SEM images. Error bars represent standard deviation. **** represent *p*-value <0.0001 when compared to PCL control.

NW size-distribution histograms

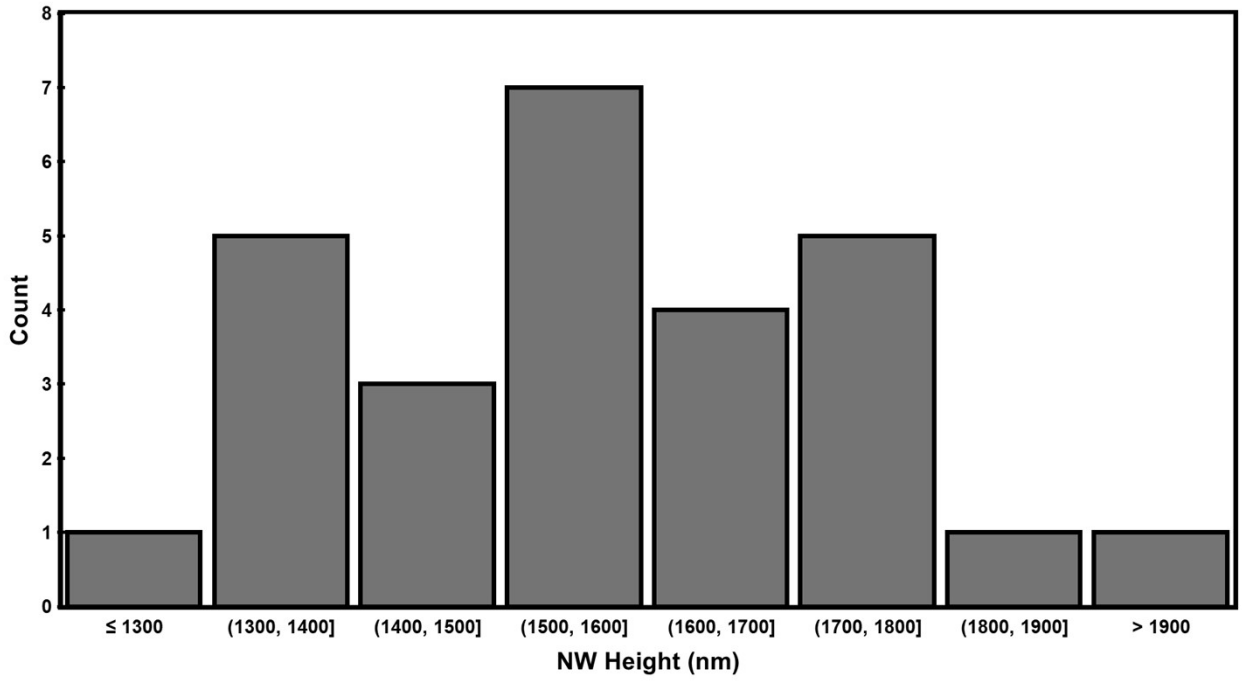

Fig S7: Histogram of PCL NW heights (n = 27) measured from SEM images using ImageJ. Bins are 100-nm intervals (labels indicate inclusive ranges at the right bound). The distribution centers at 1577.7 ± 170.5 nm (mean ± SD), indicating good uniformity of the fabricated nanowires across fields of view.

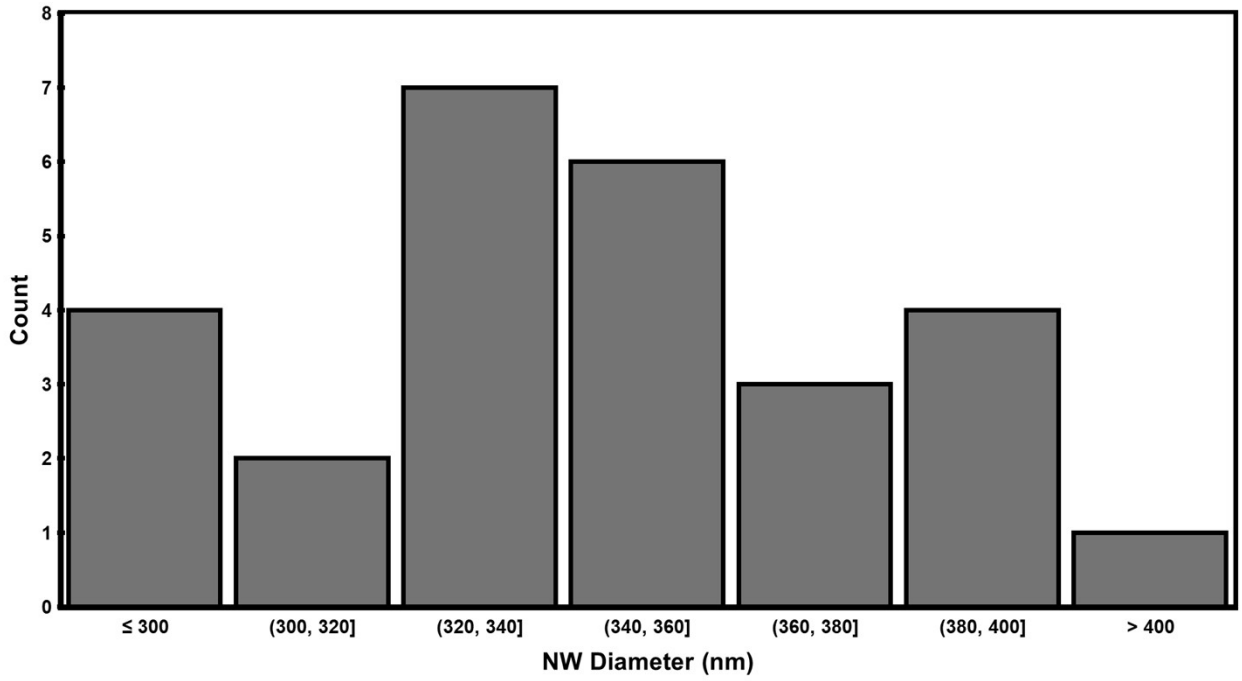

Fig. S8: Histogram of PCL NW diameters (n = 27) measured from SEM images using ImageJ. Bins are 20-nm intervals (labels indicate inclusive ranges at the right bound). The distribution centers at 341.4 ± 32.0 nm (mean ± SD), consistent with the targeted diameter obtained from the AAO-templating process.